We claim:

1. A method of improving reception in a multiple access communications system, comprising the steps of :

(i) determining at least one interfering signal transmitted from a transmitter;

(ii) determining the received power level at a receiver of said at least one determined interfering signal;

(iii) subtracting said at least one determined interfering signal, at said received power level, from the total signal received at said receiver; and

(iv) determining a desired signal from the result of said subtraction.

2. The method of claim 1 wherein said at least one interfering signal is a synchronization signal.

3. The method of claim 1 wherein at least two interfering signals are transmitted by said transmitter and said receiver determines each of said at least two interfering signals and their respective received power levels and subtracts those determined interfering signals at their respective received power levels from said total received signal.

4. The method of claim 3 wherein said at least two interfering signals comprise a first synchronization signal for determining slot timing in signals transmitted by said transmitter and a second synchronization signal for determining frame timing in signals transmitted by said transmitter.

5. The method of claim 1 wherein said at least one interfering signal is a communication system control signal.

6. The method of claim 1 further comprising the steps of:

(a) determining at least one interfering signal transmitted from another transmitter;

(b) determining the received power level at said receiver of said at least one determined interfering signal from said another transmitter;

(c) performing step (iii) by also subtracting the interfering signal determined at step (a) at the received power level determined at step (b) from the total signal received at said

receiver; and

(d) performing step (iv) to determine a desired signal from the result of the subtractions.

7. The method of claim 6 wherein said interfering signal determined in step (a) is a non interfering signal to at least one other receiver.

8. The method of claim 7 wherein said interfering signal determined in step (a) is a pilot signal.

9. The method of claim 6 wherein said other transmitter is an adjacent base station.

10. The method of claim 6 wherein said other transmitter is an adjacent sector of a multi-sector base station.

11. The method of claim 6 further comprising the step of comparing the received power level determined in step (b) to a predefined threshold level and omitting steps (c) and (d) when said threshold is not exceeded.

12. The method of claim 11 wherein the step of comparing is performed at predefined intervals.

13. The method of claim 6 wherein steps (a) and (b) are performed to select, from at least two other transmitters, the transmitter with the highest received power level in step (b) and steps (c) and (d) are performed for said selected other transmitter.

14. The method of claim 13 wherein steps (a) and (b) are performed at predefined intervals to select the transmitter with the highest received power level and steps (c) and (d) are performed for said selected other transmitter.

15. A multiple access communication system including a plurality of subscriber stations and at least one base station to transmit signals to said subscriber stations, said subscriber

stations comprising:

means to receive said signals transmitted by said at least one base station;

means to determine at least one interfering signal transmitted by said base station and the received power level of said at least one interfering signal;

means to subtract said determined at least one interfering signal at said received power level from said received signals; and

means to determine a desired signal from the result of said subtraction.

16. The communication system of claim 15 including at least first and second base stations, each base station transmitting signals to different subscriber stations of said plurality of subscriber stations, said means to determine in a subscriber station served by said first base station being operable to also determine at least one interfering signal transmitted by said second base station and the received power level of said interfering signal and said means to subtract in said subscriber station being operable to subtract said determined at least one interfering signals received from each of said first and second base stations at said received power levels respectively from said received signals and said means to determine a desired signal from the result of said subtraction.

17. The communication system of claim 15 wherein said base station includes at least first and second sectors, each of said first and second sectors transmitting signals to different subscriber stations of said plurality of subscriber stations, said means to determine in a subscriber station served by said first sector being operable to also determine at least one interfering signal transmitted by said second sector and the received power level of said interfering signal and said means to subtract in said subscriber station being operable to subtract said determined at least one interfering signals received from each of said first and second sections at said respective received power levels from said received signals and said means to determine a desired signal from the result of said subtraction.

18. A subscriber station in multiple access telecommunication system broadcasting a desired signal to said subscriber station and at least one signal acting as interference to said desired signal, comprising:

a receiver receiving the desired signal and said at least one signal acting as

interference;

means to determine the at least one signal; and

means to subtract the at least one signal from the received signal to obtain said desired signal.